



HERITAGE PASSAGES: BYTOWN AND THE
RIDEAU CANAL
WHITE PAPER

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HERITAGE PASSAGES **BYTOWN AND THE RIDEAU CANAL**

Today, the Rideau Canal is a supreme tourist attraction that welcomes all who come to admire its beauty and partake in the many recreational activities it offers. The canal offers canoeing, kayaking, boating, and cycling in the summer months and predominantly skating in the emptied channel in the winter. Used annually by over 80,000 boats, the Rideau Canal sees on average one million visitors in the summer months, and 1.4 million in the winter who skate down the world's largest skating rink (*Ottawa Sun*, January 8, 2011). In 2007 the Rideau Canal became the first UNESCO World Heritage Site for Ontario and the fifteenth for Canada. It was recognized on the world stage as illustrating “human creative genius and significance in human history” as well as being an outstanding example of technological magnitude and superior craftsmanship (UNESCO website). Monitored and maintained by Parks Canada, the Rideau Canal represents a significant part of the history and development of eastern Ontario. This paper is broken down into a variety of sections, which guide readers on concept, implementation, construction, and completion of the Rideau Canal—with emphasis on the Ottawa Locks—as well as examine how this massive project influenced the development of Ottawa. It looks specifically at the time period from the early 1800s until Bytown was incorporated and became known as the City of Ottawa and eventually selected as the capital of Canada.

{1} ORIGINS

1.1 Introduction

What we know today as Ottawa was in the early nineteenth century an untouched and untapped resource that would require perseverance, hard work and utmost creativity to modernize. The area of land surrounding Ottawa was an untamed and intimidating wilderness. The pristine beauty of the natural waterfalls, rapids, shorelines, and cliffs would have captivated any water-bound traveller; however once on land, the thick forested landscape and insect-filled swamps would prove to paint a less idyllic picture. Before any of the canal plans could be drafted, a survey of the potential route and existing land needed to be established; there were few detailed land maps in existence to guide land exploration in the early 1800s. There were also few inhabitants to guide explorers, as only a handful of small settlements and clearings dotted the shoreline.

Despite the visible challenge presented by the supremely untouched conditions of the New World, its potential to connect larger water bodies was immediately understood. To put this idea to the test, a detailed survey of the land and water systems would be critical to determine a route that could capitalize on the natural watersheds and basins and determine what was technically achievable. Explorers were not starting from scratch, as a few surveys of the area were in existence and would be used as a starting point. Lieutenant French completed one of the earliest surveys in 1783 when looking for land along the water route for future settlements (Watson, 2007 4). Ten years later, another survey was done of the townships of the Lower Rideau River by Deputy Surveyor General Stegman (Passfield, 1983 80). Two other key documents, including a rough sketch map done by Lieutenant Joshua Jebb of the Royal Engineers in 1816 and the initial survey of the proposed canal route created by civil engineer

Samuel Clowes, would be heavily relied upon when shaping the layout of the proposed canal route (Passfield, 1983 80). When Lieutenant Colonel John By (henceforth Lt. Col. By), chief royal engineer for the Rideau Canal, arrived in 1826 to begin work on the construction of the canal, all of these documents would be critical in aiding him to determine the potential route, the strongest design, and the process with which it would be executed.

1.2 The Canadian Wilderness

After the decision to colonize the land was made, the first task would be transforming the land from what appeared to be a vast and untamed Canadian wilderness. With only a small number of inhabitants who had witnessed this relatively untouched land, fewer still had the ability or ambition to record what it would have been like. Despite this, the writing of one John MacTaggart (a young civil engineer from Scotland hired by the British government) provides an abundance of knowledge of his experiences in the Canadian wilderness. In his journal he described the difficulty of exploring in the dense brush, which he referred to as “rummaging” (meaning “the art of exploring whatever lies in the state of nature”) (MacTaggart Vol. I 44). He wrote a detailed account of his experiences from 1826 to 1828 in his two-volume book *Three Years in Canada: An Account of the Actual State of the Country in 1826-7-8 Comprehending Its Resources, Productions, Improvements, and Capabilities, and Including Sketches of the State of Society, Advice to Emigrants, &c.* The account is one the most detailed descriptions, and in many cases he identifies specific measurements, dates, names, numerous observations surrounding Canadian life, the land, and the people he encountered during his experiences.¹

¹ It should be noted here that contemporary scholars suggest his writing contains blatant racism toward the Irish and is highly exaggerated; however, his curiosity for the unknown and keen interest in science and observation make it one of the most detailed accounts of the Rideau route and surrounding area from that time.

When MacTaggart began his job as the clerk of works for the Rideau Canal in 1826, the posting would see him immediately conduct a detailed survey of Samuel Clowes's proposed route (Welch 9). The art of rummaging in Canada was far different from what MacTaggart was used to in England and acknowledging the initial challenge of the terrain was not lost on him. He cleverly employed many men to accompany him, including skilled axe men and guides to steer him through the swamps and densely forested areas (Vol. I 48-49). Without these men to help him scout out a pathway he would have no doubt gotten lost. Experiencing the interior land first-hand, MacTaggart developed admiration for the First Nations who had not only an intimate knowledge of the land, but an understanding of how to find its advantages. He writes: "For in the woods, you have not only to keep course, but you also have to discover what that course is; not as on sea where the course is known, before the ship starts, that one port bears from another; but in the wilderness the relative position of places is not known,—a cause that improves the instinct of the Indian, making it so superior to that of Europeans" (Vol. I, 51). MacTaggart also writes about the difficulties passing through swamps and of thick impassable forest, even on horseback, and notes that he would often emerge from the forest bleeding and battered with bruised legs, and that the experience was physically exhausting (Vol. I 46).

The harshness of the land also depended upon which of four seasons you found yourself in. Much like the Canadian climate of today, the comfort of summer's warm weather meant a plethora of insects, and too much exposure to the sun without protection would produce blisters (MacTaggart, Vol. I 54), while the cooler fall and winter temperatures challenged workers to stay warm and keep nourished. In addition to the challenges presented by the physical environment, the weather proved arduous throughout the year. While in the depths of the wilderness, MacTaggart noted the most effective technique in keeping warm throughout the winter nights to

be “spooning” while encircling a campfire (Vol. I 53). In his journal he writes, “after having lain an hour or so on one side, some one would cry Spoon!—the order to turn to the other—which was often an agreeable order, if a spike of tree-root or such substance stuck up beneath the ribs. Reclining thus like a parcel of spoons, our feet to the fire, we have found the hair of our heads often frozen to the place where we lay” (MacTaggart, Vol. I 53). The British, Scottish, and Irish immigrants were undoubtedly surprised by the vastly different climatic conditions and the challenges that each new Canadian season brought. While the French Canadians involved in the Rideau Canal project anticipated the intense cold in the winter months, the impoverished immigrant workers were less prepared.

1.3 Surveying

Although nineteenth-century survey techniques practiced in Great Britain were legitimate and admirable in their accuracy, attempts to employ them when exploring the Rideau route quickly proved futile. Had the Canadian wilderness resembled that of England, the Royal Engineers would have used the contemporary and widely used trigonometric survey system to scope and measure the land. This process required carefully measuring the baseline with a 100-foot (30-metre) steel chain and mapping the area, accomplished through the use of an “extended system of triangulation using theodolite to take the bearing” (Passfield, 1983 81). This kind of technique worked under the assumption that one could gain a straight line of sight, a task that was not possible in the dense forest and swampland of the Canadian wilderness. For this, and many other reasons, multiple surveys were conducted over the years, most notably that of Sherwood and Jebb (1812), Samuel Clowes (1824/5) John Burrows (1827), and John MacTaggart (1826, 1827) (Welch 3-7).

In order to complete the much-needed ground surveys that could project accurate measurements and land details in such an inhospitable region, MacTaggart utilized horses and canoes when possible, but was usually forced to compile topographical information on foot (Passfield, 1983 81). Alongside hired axe men, who were tasked with the physically demanding and time-consuming tasks of chopping down trees, the survey crew would try to clear a visual pathway to accomplish the simple sightline needed to measure (Passfield, 1983 81). Despite this much-needed assistance, the surveyors and their parties were often reduced to crawling through the thick brush, using candles to see, and all the challenges often slowed work down: four days surveying here could be accomplished in one day in Britain (Passfield, 1983 81).

Since the whole purpose of the survey was to produce a detailed map of the area, losing one's bearings was a frequent occurrence. It was also one of the common fears of surveyors and most likely why men who had knowledge of the land were hired for these voyages. In one particular instance near the end of MacTaggart survey, he and his crew found themselves lost. He writes:

There we were, no one knew where, in the heart of the endless wild, without food or anything else whatever for the comfort of human life; but we minded not. We halloed out frequently as loud as we could, but no one heard us. We were sometime answered by the owl...The sun arose...and taking our bearings by the sun, the compass being useless, I found we were returning as we had come the day before; we therefore lay to, to strike the course. While doing so we heard the report of a musket at a distance...It was an Indian shooting wild duck. We all felt rejoiced to see him...engaged him as a guide and he brought us out. (MacTaggart, Vol. I 56-58)

Although MacTaggart's writing alludes to the expedition as having been harsh on the mind and body, such expeditions were critical in understanding the land and shaping the canal's final pathway.

1.4. Selecting Entrance Bay

As the preliminary preparation for the canal had been underway in Montreal, the first major decision of the newly appointed chief engineer of the Rideau Canal, Lt. Col. By, was to determine where the northern entrance should be (Bush 7). After examining the recommendation proposed by civil engineer Samuel Clowes, based on his findings from his 1823-24 survey of the Ottawa region, Lt. Col. By did not feel that the spot a few hundred metres downstream from the beautiful Rideau Falls was the best option (Passfield, 1983 80). Instead Lt. Col. By chose a beautiful gorge that had 80-foot (24-metre) cliffs on each side and had been referred to by locals as Sleigh Bay and Rafting Bay; the site was also favoured as being the more practical choice by John MacTaggart (Bush 7; Passfield, 1983 81). The valley soon became known as Entrance Valley, and the bay that surrounded it as Entrance Bay. This pivotal decision meant that workers would avoid many additional kilometres of laborious rock excavation needed with the other site (Passfield, 1983 81), but his decision would be heavily questioned later on when the issue of over-expenditure arose. In the court proceeding in 1832, a Royal Engineer was asked, "With regards to the work generally, are you of the opinion that the most proper line has been selected?" which was met with one word: "Certainly" (Moon 22).

1.5 Planning for a Canal

It was no small feat carving out the waterway and creating the necessary locks to allow for the 202 kilometres of waterway to be fully operational. With 23 lock stations possessing 45

individual locks (only two of which were added in 1880 to connect the town of Perth), the canal route from Ottawa to Kingston remains one of the best-preserved slack water canal systems in the world (Watson, 2007 2). Heavily influenced by European transportation technology, the engineering and design of the canal had to be modified to accommodate the land elevations and watersheds of the North American environment (Watson, 2007 2). The construction of the Rideau Canal was an enormous technical challenge involving the application of the most sophisticated contemporary technologies, slack water systems and coffer damming being those most extensively used. Slack water canals ensure that the water remains in one place, and is not subject to flow or movement, and coffer damming was a system of isolation employed to keep back the water while new sections of the canal were being constructed (Leggett, 1982 23).

Without the information given by past surveys, planning for the canal would have been impossible as the canal integrates five major watersheds beginning at the Ottawa and Rideau rivers, the Cataraqui River, the Gananoque River, and finally Lake Ontario to the St. Lawrence River (Watson, 2007 2). Expanding so far geographically, the terrain rises 50.6 metres in Kingston at Lake Ontario, peaks at 130.9 metres above sea level where the canal meets the Tay Canal to Perth, and finally descends to 83.3 meters to Ottawa (Watson, 2007 2). Part of the ingenuity was connecting the large waterway. In the end, 19 of the 202 kilometres represent an artificial channel that uses dams, flooding, and lock stations to create one continuous and permanent canal (Watson, 2007 2). Unlike aqueduct technology, which was historically used to manipulate and move water from one location to another, the Rideau Canal is a slack water system.

{2} MILITARY

2.1 Introduction

With the signing of the Treaty of Paris in 1783, the thirteen colonies of North America were officially recognized as being independent from Great Britain (Mika 52). Years later, on June 18, 1812, the United States declared war on Great Britain as a naval fight took place on Lake Ontario and the Atlantic seaboard (Legget, 1982 21). Thanks to the swift action of British troops and Canadian volunteers, Upper and Lower Canada were successfully defended, but the safety of the Canadas was no longer secure. In the years that followed, the British were still wary about the possibility of another American attack and the St. Lawrence River—the natural boundary between and the United States and the Canadas—was no longer seen as being a safe route between Kingston and Montreal. The War of 1812 sparked a larger defence strategy to defend the Canadas, and key to this was the need to have a secure route for transportation and interior communication in the event of another attack (Leggett, 1982 21). The canal would be driven primarily by military necessity and although the size of the locks was the subject of great debate, in the end they would be designed to accommodate both gunboats *and* steamboats. For this, Lt. Col. By is to be commended. His foresight would allow non-military traffic in the following decades when the threat of war with the Americans was altogether absent.

2.2 Defending the Canadas

The War of 1812 ended with the signing of the Treaty of Ghent on Christmas Eve 1814; however in the decade to follow, the British were increasingly fearful of another attack from the Americans (Legget, 1982 21). These fears mounted in Kingston, and the British military leaders stationed there strongly urged those involved in defence plans to find an alternative to the St. Lawrence waterway in order to transport supplies and military men (Legget, 1982 21). In 1819,

the Duke of Wellington developed the strategy for the defence of Upper Canada and advocated for the construction of an interior line of community so that military troops could be moved to any fort and thus stave off an American invasion (Passfield, 1980, 8). With so few roads in existence, water travel was the most realistic option, and the water pathways that had been used by First Nations presented a viable option. Building a canal between Kingston and Ottawa, linking Lake Ontario and the St. Lawrence River to the Ottawa and Rideau rivers, would lay out a route for the efficient transport of soldiers (carrying as many as 10,000 of them at once) and materials in the event of war, but it was foreseeable that the waterway could also act as a trade route for the inhabitants on either end and along its margins. The Rideau Canal was seen as a transportation route critically important to realizing the Duke of Wellington's grand strategy for protection of British North America in the mid-1820s (Legget, 1982, 42).

Despite the initial military intentions, upon completion in 1832 that rationale had all but disappeared. The final cost incurred on the British purse was called into question during the British Parliament's 1832 investigation of Lt. Col. By. In the court preceding a military officer of the Royal Engineers was questioned, as he had a first-hand account of the project, having been part of a commission to survey the line. Part of his court transcript reads:

In the event of war do you conceive there would be any communication between the Lower and Upper Provinces without the Rideau Canal?—For the transport of stores not without a very great expense, and a very great uncertainty.

Do you conceive that any merchandize could be carried up the St. Lawrence, the Americans possessing Barnhart Island?—The Americans, possessing Barnhart Island, control the whole channel at this spot.² (Moon 27)

This meant that government stores, which provided military provisions as well as food, clothing, and shelter provisions, would be at great risk while passing certain areas of the St. Lawrence. It was also known that the rapids found on the waterway thwarted the passage of certain watercrafts and made the trip more treacherous. From a military standpoint, an interior safe route was paramount to successful defence.

2.3 Communication Breakdown

Although it was the British Treasury that funded the construction of the Rideau Canal, it was the Board of Ordnance that required convincing to release the funds. Despite his position of authority Lt. Col. By was constantly seeking their approval and in some cases going forth with construction before he had heard from them because of lengthy communication delays. As superintending engineer, Lt. Col. By was responsible for the design, planning, and overseeing of the Rideau Canal project and he wrote countless letters to the Board of Ordnance stationed in London, England, suggesting improvements and extensions to existing plans, which they usually dismissed for economic reasons. The travel time for correspondence between Ottawa and the United Kingdom was between eight and nine weeks *if* there were no monetary decisions to make or discussions to have and the “crossover” of letters was a common occurrence. Lt. Col. By would respond to the Board of Ordnance offering edits to plans in response to their most recent

² Barnhart’s Island is a large island located on the St. Lawrence near present-day Massena (USA) and west of Cornwall (Canada).

dismissal while yet another message, outlining firm—and alternative—orders was already in transit from London (Passfield, 1980 60).

2.4 Size Debate

During the planning stages of the canal, there was much debate surrounding the final dimensions of the lock stations as multiple visions were competing for final approval. The Smyth committee, under the direction of General Sir James Carmichael Smyth, submitted Samuel Clowes's recommendation for locks 108 feet (33 metres) in length and 20 feet (6 metres) in width, for the deceptively low cost of £169,000—which was approved, but would start a much larger debate over the size and cost of locks (Bush 3). The debate was rooted in the understanding that the larger the size of the locks, the larger the final expenditure. Many of the government-appointed officials in Canada agreed with Lt. Col. By's decision for larger locks as well as defending his choice to keep moving work forward before orders had been given, both of which actions prompted further investigation (Bush 44). One of his supporters was James Kempt, who had been appointed chairman of the Parliamentary committee (known as the Kempt Committee) and toured and investigated the entire line of the canal alongside Lt. Col. By, seeing first-hand Lt. Col. By's vision and reporting back in June 1828 (LAC RG8 C-series, Vol. 45, 178). Kempt supported Lt. Col. By's view that he had indeed secured the best terms for contracts, and although he supported By's request for larger locks he didn't feel they needed to be as large as Lt. Col. By envisioned: Kempt felt that 134 feet in length and 33 feet in width (41 and 10 metres), rather than Lt. Col. By's proposed 150 feet in length and 50 feet wide (46 and 15 metres) would be sufficient to allow for both steamboats and gunboats (Bush 44). James Kempt's dimensions were approved in the end, but some, including Smyth, remained in opposition to the larger lock size (Bush 44).

20-Foot Lock Design (20 feet x 108 feet) (6 metres x 33 metres)

This 20-foot lock design was directly modelled after the Lachine Canal that was on the verge of being completed in Montreal in 1824. Using the Lachine Canal and Clowes's surveys, the Board of Ordnance concluded that it should be able to construct the 202-kilometre waterway for as little as £169,000 (Bush 7). Two years later, in 1826, when Lt. Col. By was appointed the superintending engineer of the project; he immediately set about resurveying the route and submitted a revised estimate to the Board of Ordnance (Haig 65-66). His estimate, more conclusive and detailed than Clowes's, placed the project at £474,844 (Passfield, 1980 38).

50-Foot Lock Design (50 feet x 150 feet) (15 metres x 46 metres)

The 50-foot lock design was proposed in 1826 by Lt. Col. By to General Gother Mann, who at the time was the Board of Ordnance inspector general of fortifications (LAC, RG8 C-series, Vol. 42, 151). Lt. Col. By believed that the Rideau Canal had potential to be a revenue-generating commercial waterway as well as serving its military purposes. Increasing the lock size to 50 feet by 150 feet would allow not just gunboats to pass through the canal but also larger civilian steamboats, which he believed were the future of military defense (Bush 38). Lt. Col. By argued that civilian steamboat trade would provide the government with large sums of revenue to offset the cost of the canal. Although Lt. Col. By was never able to convince the Board of Ordnance to build locks of this magnitude, his arguments for larger locks played a part in getting the initial design of 20 feet scrapped in favour of the 33-foot locks we have today.

33-Foot Lock Design (33 feet x 134 feet) (10 metres x 41 metres)

The design we see today is a result of decades of surveys and years of debate that stretched across continents. Lt. Col. By's foresight to push for locks big enough to accommodate larger vessels allowed the canal to be used by many steamships such as the S. S.

Pumper, Rideau Queen, and Rideau King for decades to come. Although the canal was never used for military purposes, we can presume that the larger size would have facilitated the desired goals relating to war efforts (transporting troops, equipment, and supplies) if needed. With the size being larger than the original estimate, the final cost was also larger than expected; upon completion of the canal in 1832, the final cost was approximately £822,000 (Passfield, 1982 34).

2.5 From Defence to Trade

Since the Canal would remain a military-driven project throughout its construction and early post-construction, it is not surprising that the idea of fortifying Bytown was proposed. In October 1830, following orders, Lt. Col. By put together detailed plans for a permanent fortification that would be placed on Barrack Hill (De Jonge 31). In these plans, Lt. Col. By used the existing barracks but added bomb-proof casements, massive storage facilities, and ramparts in case of land attack. He projected it would cost £205,450 (De Jonge 32). In the end the effort was put into the fortification of Kingston, and Bytown would assume only a minor military role; however, long after the canal was finished the military still played a role in shaping the town's fabric. The military garrison that occupied Barrack Hill remained a reliable economic and social pillar, as the men would purchase fuel, food, and living amenities in town, contributing to the types of trades that developed and thrived in Bytown; they would also partake in social gatherings, attend church, and take on civic duties (De Jonge 43).

The diminishing view of Bytown as a significant military post also granted the settlers along the length of the canal an extended opportunity to prosper. The accessibility of the canal made the transportation of goods—as well as people—highly efficient and fairly affordable. On June 4, 1833, only one year after the completion of the canal, tolls were instated and applied to all items boarding the steamers and barges; they covered everything from civilians to liquor,

tobacco, butter, and lard (Barker 55-6). Furthermore, May 6, 1834, marks the day on which duties began on all timber travelling the waterway, but they were highly contested by the timber trade and short-lived (Barker 58). Lt. Col. By had always envisioned the revenue potential of the canal, but only in the years 1844 and 1845 did the revenue of the tolls (combined with the rent generated from government-leased land) cover the annual operating expenses of the canal, all other years producing an economic loss to the Crown (De Jonge 27). In the end the Rideau Canal was not the revenue-generating project expected, but it greatly contributed to the prosperity and growth of business for Kingston, Ottawa, and the numerous settlements that saw steamboats with provisions and people pass through for nearly a century (Bebee 15).

2.6 By's Recall

Lt. Col. By had spent a total of five years working on the Rideau in Canada, with his wife, Esther, and their two daughters. Throughout this time, he maintained a good reputation, having “established himself as a man of honour and a builder of integrity” (Leggett, 1982 45). When the canal had finally opened in the spring of 1832, Lt. Col. By received much praise from the Canadian community for successfully completing such a massive undertaking and on time. Not everyone, however, was content in praising Lt. Col. By. A young Englishman named Henry Howard Burgess had been hired early on as a clerk, a job in which he oversaw certain financial aspects of the project, but was dismissed from the position in March of 1830 due to countless episodes of “insubordination, drunkenness, sub-par work habits and missing duty” (Andrews 151). In November of the same year, Burgess contacted Lt. Col. By and demanded he be paid the entire sum of his expected contract (Andrews 151). Allegations flew back and forth that Burgess was a liar and insane, and when By denied Burgess’s request, Burgess threatened to notify the governor-in-chief of Lt. Col. By’s “misappropriation” of public funds (Andrews 150-

151), and claimed to be the “only person living who is able to explain the accounts for the construction of the canal” (Hind 142).

At the time there was already public concern over the escalating cost of the canal, so when the Board of Ordnance became aware of Burgess’s charges, they felt obligated to investigate further and ordered that Lt. Col. By be recalled to England (Andrews 154). These expenditures represented a vastly higher sum than had originally been determined, and this did not sit well with the board. In February 1831, official documents, account information, and correspondence were collected and would be used in the ensuing investigation (Barker 8). By returned to England in 1832, not to the grand praise and knighthood he anticipated, but rather to face intense criticism and questioning by the British House of Commons. Throughout the trial Lt. Col. By received multiple letters of support and in the end was fully exonerated of all charges. But he was left devastated and heartbroken by the outcome and his health deteriorated rapidly. Lt. Col. By died shortly after the trial ended, on February 1, 1836, in Frant, East Sussex, England (Andrews 154).

The Trial

Without knowing if the canal had indeed been completed in full as Lt. Col. By had anticipated, the British Parliament Committee on Canadian Canal Communication, which was tasked with determining if the over-expenditure was a misappropriation of public funds, drafted a letter sent June 28, 1832, on their findings (Moon 10). Part of this letter, signed by J. N.

Fazakerly, chairman, reads:

The Committee cannot conclude their report without a strong expression of regret, the irregularity, hitherto so much complained of in the conduct of the works on the Rideau, should have prevailed to a great extent in the course of the last year. The expenditure has

much exceeded both the estimates and the votes of Parliament, and a considerable delay, not very properly explained, seems to have taken place in the making of this excess known to the Treasury. (Moon 11)

The letter outlines that the true cost can never be known, but that via treasury minutes, reports, and the like, inconsistencies of expenditures were being questioned and answers being sought.

The spending of money before it had been granted seemed to be the source of much of the criticism given by the British Treasury, as we see in a letter from the treasury dated May 25, 1832, which reads:

It appears... that Lt. Col. By had actually expended to the close of the year 1831, £715,408.15.6... being £22,742.15.6 more than had been granted for the work by Parliament; and that without waiting for any authority from this country, he has gone on during the present year with a further expenditure, entirely unsanctioned, and which is stated will probably amount to £60,615.10, making an excess of £83,358.5.6 beyond the amount granted to Parliament (Moon 11-12).

The massive misappropriation of public funds is also called into question as the letter goes on to state:

It is impossible for My Lords to permit such conduct to be pursued by any public functionary. If My Lord were to allow any person whatever to expend with impunity, and in particular after repeat increases of the original estimate, upon any work under his superintendence, a larger amount than that sanctioned by Parliament and by this Board, there would be an end of all control, and my Lords would feel themselves deeply responsible to Parliament. (Moon 12)

It is no wonder that Parliament felt obligated to investigate in order to show the public that this kind of behaviour was unacceptable and that there could be consequences. For these reasons, as well as the outcry of Burgess, a full parliamentary enquiry was ordered.

The first day of the trial was March 21, 1831, and saw Royal Engineer Lt. Col. Edward Fanshaw examined. The court transcript is telling for how he interpreted the undertaking of the Rideau Canal:

When was your attention first called to the line of works?—In the beginning of the year 1828 I was appointed on a committee to investigate Lt. Col. By's estimate, as a member of the committee assembled in London to compare the estimate with the drawings sent home to ascertain if any deductions could be made.

Do you recollect generally your impressions on that estimate?—We brought out various differences, but in the balance between the two, there was not above £7000 or £8000 deductions that we considered could be made. (Moon 22)

The communication challenges and lengthy delays were part of the problem in assessing accurate cost, and the incredible low estimate submitted by Samuel Clowes was also the source of much controversy.

It was Clowes's estimates that were approved by Parliament and set expectations for what the final construction costs would amount to. This was a critical aspect of the trial as many who would take the stand were asked about it. The following transcript of Lt. Col. Edward Fanshaw touches on this aspect:

Are you acquainted with an estimate which was sent sometime before by a person of the name of Clowes?—Yes; that estimate was considered in London at the same time as Lt. Col. By's original estimate.

That turned out to be altogether inadequate?—It was altogether fallacious as to the amount; but the same line of navigation is nearly adhered to, with a few variations....

That unless they were in possession of the documents as much in detail as those [of Lt. Col. By], they could hardly come to a correct opinion?—No correct opinion can be come to till the work has finished, in such a wilderness, where you have to feel every step, and where no work has been undertaken before. (Moon 23)

Lt. Col. Fanshaw makes a good point that an estimate does not account for the real-life challenges that are faced in a wilderness and that Lt. Col. By did what was asked of him and maintained respect for the British purse to the best of his abilities, keeping costs low where he could.

Letters of Support

When the Parliamentary enquiry became known in Canada, many people wrote letters of praise and support for Lt. Col. By. Letters poured in from many different towns and not just those directly along the line of the canal, praising the benefits of the project. During a public meeting held in November of 1832 the citizens of Brockville praised Lt. Col. By for his genius in overcoming the obstacles of canal building in Upper Canada (Legget, 1982 45), stating that his perseverance allowed him to rise above “the many difficulties ... which to an ordinary mind would have appeared insurmountable,” and going on to say:

Therefore, that the thanks of the Inhabitants of this Town are justly due and are now tendered to Colonel By for his great and meritorious Public service— and that a copy of the Resolution adopted at this meeting be transmitted to him by the President of the Corporation of the Town, accompanied by a suitable letter on the Occasion. (Legget, 1982 45)

The letter is signed by Brockville's President of Police, Daniel Jones, and dated November 17, 1832 (Legget, 1982 45).

Throughout his time in Canada, Lt. Col. By spent time in Montreal while he was planning and designing the Rideau Canal, and while he was there preparing for his journey back to England, a letter from Montreal was being written. To show Lt. Col. By how much they valued his work, a letter dated September 26, 1832, was drafted by the chairman of the Committee of Trade in Montreal (Legget, 1982 45). The beautifully written letter states:

In taking leave of you, we wish Mrs. By Yourself and Family a prosperous Voyage to your Native Land, and whatever envy, jealousy, disappointment or ignorance of facts, and circumstances, may have done, to detract from the merit of your Services; we have such confidence in the justice and knowledge of the present Head of your Department, Sir James Kempt, who himself was a Witness of your indefatigable exertion, that we venture to express a well-grounded hope they will be so represented to His Majesty's Government, as to induce His Majesty to confer on you some special Mark or Royal favour and approbation. (Legget, 1982 46; SRO, (D) GD 45 (3) 457. p. 840)

The letter was intended to give Lt. Col. By some comfort in knowing that the people of Canada believed him worthy of an award or formal recognition of achievement, whether or not the sentiment was shared in his homeland.

{3} ARCHIECTURE

3.1 Introduction

The sheer scale and massive scope of the Rideau Canal undertaking makes it like no other in that area from the time period. It has often been referred to as a technical feat of genius or a work of human creative genius and it is no doubt a project that continues to have a significant

influence on eastern Ontario culture. Although other large-scale canals existed in the early 1800s, none had to be carved out of the dense wilderness, and integrate multiple watersheds, flood rapids, and drain swamps, quite like that of the Rideau. In a report to His Majesty, Joseph Hagerman stated:

The excellence of the workmanship and the superior construction of the locks and dams require no praise. They speak for themselves, and are the subject of much admiration, and in the opinion of those most competent to judge such works, exceed anything of this kind in any parts of the world. (Hagerman)

Specific infrastructure would be needed to accommodate workers, military personnel, and materials needed for all phases of construction. Different planning and engineering challenges also arose that required a higher degree of engineering skill, in particular the Jones Falls lock station, which in the end used an arch dam that “stands to this day as one of the most significant engineering works of the nineteenth century in North America” (Andrews 123).

3.2 Getting Started

The construction of the Rideau Canal was a massive and ambitious undertaking and in the early days spirits were soaring high with promise of what would come. The ceremonial first stone was laid on August 16, 1826, by famous Arctic explorer Sir John Franklin, who had just returned from an expedition on the Mackenzie River (Van Cortlandt 11). The project was still in the surveying and planning stages at that point (work did not begin until September 21, 1826), and Lady Dalhousie had the privilege of being the one to turn the first sod, which symbolically commenced the project (Van Cortlandt 11). Almost one year later when work on the series of eight locks in Entrance Valley commenced, a two-tonne cornerstone was laid by the governor on the east side of the canal beneath the level of the river (Brault 50). The atmosphere of the

scene was full of good cheer, as there were “fireworks” (which would have just been a series of small explosions), rum being served, and festive parties being held to start off the project (Brault 51).

3.3 Tools and Trades

At most lock stations, Bytown’s in particular, the first step was to clear the land and create engineering plans for subsequent design phases. Due to surges in immigration there was an abundance of cheap manual labour to aid in all phases of canal construction, but craftsmen were in short supply and therefore could expect to be paid and treated far better (Wylie 10). With many immigrants seeking unskilled work, and an influx of French Canadians who were having difficulty securing work in the timber trade, labourers were so numerous that there was no need or motivation to use machinery. Therefore the work was done by pure physical strength and aided by a variety of simple tools.

Clearing Land

In preparing for the eight locks to be constructed, one of the first essential tasks was to clear Entrance Valley, which would have been littered with massive trees and shrubs. The same French-Canadian axe men and lumberjacks who were involved in the clearing of the paths for earlier surveys were once again called upon to clear the canal’s path before construction could really get underway. The French Canadians were known to excel at this job, which was done with axes and brute force, as many were well acquainted with clearing land for their own farms in the brush of Quebec (MacTaggart, Vol. II 103-104). While the large timbers were easily dragged away by the aid of oxen, stumps on the other hand posed a formidable problem and often required excavation from underneath their roots (called “pooling in”), followed by the use

of dynamite (MacTaggart, Vol. II 103-104). This was an extremely dangerous aspect of the job, as even an experienced blaster could not accurately anticipate the size of the resulting explosion (Price 37-38). In a first-hand account MacTaggart writes: “I once saw a poor man blow a red stick and hold it deliberately to the *priming* of a large shot he had just charged....off went the blast and took away his arm, and half of his head: he was killed in a moment” (Vol. II 245-246). It was common for labourers who worked with these combustibles to suffer injury and in some cases even death.

Excavation

To form the embankments of the canal at Entrance Valley an enormous amount of material—much of it rock and soil—required excavation. Using picks and shovels and then carting it away by wheelbarrows to the allocated dump site, the Irish were thought better prepared for this kind of work as many had done work on roads and canals in the British Isles before emigrating (Wylie 24; Valentine 19). Holes were drilled into rocks with hand tools, filled with gunpowder (a mixture of three parts “nitre to one part of a mixture of sulphur and charcoal”), and blasted (Valentine 20). Most of the accidents that did occur when blasting were blamed on the inexperience or deficiencies of Irish workers or on intoxication; however, a general unfamiliarity with blasting procedures and limited safety standards were also a reality of this kind of working environment (Valentine 20-21). Once the earth and rock were removed from the channel, they were taken away by wheelbarrow and horse-drawn cart (Wylie 24). The implementation of barrow runs was also common to overcome rough patches of earth or steep inclines. In a barrow run, ramps were set up using wide planks, and the strongest men at each site “frequently were aided by ropes attached to the barrow and to their belts which then ran up the side of the slope and round a pulley at the top” (Wylie 24). Although it varied between work

sites, the overseeing contractor would provide some of the necessary tools such as wheelbarrows, while other tools such as picks and shovels were expected to be supplied by the workers themselves (Wylie 22). There was a great need for drivers with teams of workhorses and oxen; it was usually farmers from nearby Hull that could offer their services and because of the scarcity of strong livestock, they tended to receive excellent wages in return (Wylie 22).

Masonry

While clearing and excavation required immense amounts of physical stamina, masonry and the splitting of stone demanded a higher level of skill and craftsmanship from workers. The task would have been made slightly easier in the winter as one method of splitting large stones involved putting water into drilled holes, which would then expand as they froze and naturally split the stones (Wylie 24). In order to ensure straight and accurate lines, holes would have been drilled by three men, two facing each other evenly holding the chisel and one on the sledgehammer (Leggett, 1982 47). Once a stone was split, it was passed on to masons who would use chisels and other tools to finish it off, at which point a series of hand winches and pulleys would aid in hoisting the stones onto carts to be moved to the lock pits (Wylie 26). When the stones were being manoeuvred into place at the locks, the stones would have been hauled up planks by means of block and tackle, and put into their proper position using crowbars and wooden mallets (Wylie 26). Stone, cement (obtained from Hull), and clean white sand would have been used to fill in gaps between each stone, and a mixture of clay and water created a water-resistant puddle used on the backs of the walls (MacTaggart, Vol. I 245-246, 340-341). The crabs and other pieces of cast iron were furnished by the forges at St. Maurice in Lower Canada, and flat irons would have been available in large quantities in Montreal (MacTaggart, Vol. I 340-341; Price 37-38).

3.4 The Eight Locks

The eight locks situated at Entrance Bay mark the beginning of the journey of the Rideau Canal from Ottawa to Kingston. Entrance Valley is one of the largest and most impressive of the Rideau lock stations and construction began early with advertisements appearing in Montreal as early as 1827 looking for labourers, masons, and timber (*U. E. Loyalist*, Sat. Mar. 3, 1827, p. 319). Lt. Col. By awarded the construction contract to Thomas McKay, a Scottish mason and experienced canal builder who had already earned a reputation as a reliable contractor during the construction of the Lachine canal a few years earlier (LAC, WO55, Vol. 863, Reel B-2809 69). The construction site at Entrance Valley would have been a scene of tightly controlled chaos with cutting, clearing, excavating, and masonry all being executed concurrently (LAC, RG8, Vol. 44, 159-164). It took from 1827 until 1831 to complete the locks and the entire process was slow, arduous, and dangerous as many challenges arose. For example, shortly after the area was selected and work on the locks had commenced, a large fire broke out in the valley, quickly consuming all the surrounding timber and the wooden locks that had been created thus far (Van Cortlandt 12). And well into the project workers were even forced to backtrack and remove masonry that had been laid before Lt. Col. By's wider canal proposal was finally approved by the British Parliament (LAC, RG8, Vol. 20 Reel B-1295, 376). In 1830 both banks of the newly excavated canal caved in simultaneously, and although no one was hurt, the collapse was just another example of how dangerous the work was.

The canal was designed and constructed in proper military fashion. The eight locks were built with purpose and functionality and little thought was given to any ornate visual detail. Despite this, with the completion of the locks in 1831, the total expenditure just for the first eight locks had risen from the estimated £58,889 to a total of £70,643 (Passfield 1980, 93). The

eight locks were among the first ones to be tested. When the sluices were opened, the water had such force that it was able to move large stones out of place from the sill. These stones were then secured with the additional reinforcing measures of cement and bolts with heavy iron straps (LAC, Library, U.G.7, G72, Vol. I. Professional Papers of the Corps of Royal Engineers, Lt. Frome's Report p. 79-80).

How a Lock Works

In order to get ships around large elevations like Entrance Valley, rough bits of water, rapids, or other such obstacles, locks were incorporated into the canal's design at various points. Locks are a series of gates which open and close in the water to make a stable pool that can hold the boat in place and essentially act as water elevators; locks get the ships from higher elevations of water to lower elevations, or vice versa, safely. The basic system uses small tunnels under the waterline, which add water or drain it away from underneath the boat. These smaller tunnels are called sluice channels and are controlled by a separate smaller gate system known as sluice gates which when opened or closed allow water to flow freely or be plugged up, respectively. The lockmaster and his staff operate all the winches and mechanisms that control the various gates and direct the traffic through the locks. For example, when going upstream the lockmaster will open the first of two gates to the locks, let the boat in, and then close the gates behind them, securing the boat in the slack water pool between these two gates. Next the lockmaster will open the upstream sluice gate and allow the lock area to fill until it reaches the same height as the next lock station. At that point, the larger gateway can be opened and boats can move into the next lock. The procedure is repeated as many times as necessary.

Reconstructions and Maintenance

All who experienced it praised the Royal Engineers' design for the Rideau Canal as a

supreme example of contemporary engineering; however, it was not without its faults. By 1831-32, maintenance had already proven necessary. Many of the original gates had buckled under the pressure of the water they were meant to control. Reinforcing rails were thus bolted across the face of the gate sheeting to fortify them and prevent distortion and collapse (Passfield, 1985 5). In 1839, a crab and endless sluice valve system was appropriated to replace an original in-culvert sluice valve mechanism determined to be faulty, and these were placed at locks with lifts of ten feet (3 metres) or less (Passfield, 1985 5). Ongoing maintenance efforts in the 1920s led to the replacement of much of the original stone facing concrete blocks (Passfield, 1985 22). These are just some of the ongoing maintenance that was required to keep the Rideau Canal fully operational during its first hundred years.

Later efforts got underway as part of a modernization program undertaken from 1967 to 1969 by the Department of Transportation, starting with two locks being converted and equipped with a hydraulic processes while all other gates and sluices remained manual (Passfield, 1985 22). In 1982-84, Parks Canada undertook an enormous reconstruction project on the Ottawa Locks specifically. Here, they found many remnants of original construction and added freshly quarried stone that now predominates the site; much of the original stone was so weathered it could not be reused or repurposed (Passfield, 1985 22).

3.5 Other Architectural Endeavours

When Lt. Col. By chose to put the headquarters at the north end of the canal (as opposed to well-established settlement in Kingston) he must have known that it would be a massive undertaking not only to clear the land, but to do so in time to develop a community. Some of the first buildings that were designed and constructed during the early days were a direct result of the military presence and the Rideau Canal project.

The Commissariat (Bytown Museum)

The Commissariat is an impressive three-storey stone building that now houses the Bytown Museum. In 1827, the Commissariat was one of the first buildings constructed for canal purposes and many researchers have noted the fine craftsmanship done by Scottish stonemasons as being an essential reason it remains solid and standing today. It has the coveted title of being Ottawa's oldest stone building. The contracts for construction were let in February 1827, and Thomas McKay—a Scot who would go on to create many of the early buildings and churches in Bytown—won the contract (De Jonge 51). No time was wasted as a progress report from June 1827 shows that walls were up and only part of the roof remained to be filled in; in the end the construction of the Commissariat took a mere six months to complete and it was finished by August of that year (De Jonge 51). The stones were taken directly from Entrance Valley excavation, and the timber would have been taken from the surrounding area (De Jonge 6). The interior of the Commissariat (and the Ordnance Office which was also constructed at that time) was not furnished until sometime afterwards, and raised the final cost of the two buildings from £1,760 to £2,199 (De Jonge 51).

The Commissariat fulfilled multiple roles throughout the years. The ground floor was open and acted as storage space for the bulk food provisions (from salt pork to rum), and was also able to store and provide construction hardware and fuel needed through different stages of work (De Jonge 19). The second floor would eventually become offices for the department responsible for putting together the tender and letting of contracts, and the ordering of tools and materials (De Jonge 19). The Commissariat staff would include accountants, issuers, clerks, and coopers, each assigned their own individual duties. By 1830, when the department was

handling a considerable sum of money, a vault was added to the southwest corner of the ground floor for security and safekeeping (De Jonge 19-21).

Over the years the building was a hub of activity. In 1845, following an extensive review of the roles fulfilled by the Commissariat and Ordnance departments throughout the British Empire, some minor revisions were made in their duties to better rationalize the responsibilities of both organizations. Some responsibilities shifted to the Ordnance department, but as the role of the military continued to diminish, so too did the degree of responsibility. In 1856, 24 years after the canal opening, the British government transferred the Rideau Canal and the Commissariat building over to the Board of Works for the Province of Canada (De Jonge 31).

Ordnance Office (Royal Engineers Building)

In 1828, as canal work was underway, the need to have more room, specifically for a dedicated office for the Royal Engineers, was apparent. Up until this point the store and storage (known as the Tool Shed) were housed in a small log building at what would be today the corner of Rideau and Sussex streets (De Jonge 21). The new three-storey stone building, known as the Ordnance Office or the Royal Engineers Office, was quickly constructed almost directly across the Commissariat building and level with the second lock. Lt. Col. By wanted both the Commissariat and Engineers buildings to be built right away and on time, so he contracted each building out to different contractors. Robert Drummond was in charge of the construction and the Ordnance office would be primarily used as a storehouse and engineer office for construction-related issues (Haig 35). Over the course of the years, it was used for many different purposes, however upon its construction the first floor would have been a workshop for such highly skilled craftsmen as carpenters and stone cutters who were reported to be working on the locks gates on the first floor in 1828 (LAC, WO44, Vol. 18 340). As its name

suggests, the building also served as Lt. Col. By's headquarters for canal operations until his recall in 1832.

Barrack Hill

Barrack Hill, now the site of the Parliament of Canada, was heavily used by military personnel during the canal construction period and for many years beyond. After a few draft proposals and plans for what kind of buildings should be built, Lt. Col. By decided to construct three similar stone barracks, built of rubble stone, each measuring 108 feet by 70 feet (33 metres by 21 metres) with sixteen rooms on the ground floor and a garret (De Jonge 56-57). Over the years the barracks would assume different purposes depending on the most pressing needs at the time. One would be used for a hospital for a select period, another for officers' quarters, and the third barrack used as a detachment for thirty British regulars. The contract for the barracks was awarded to well-known contractors McKay and Redpath, who agreed to build each one for £499 by June 1827 (LAC, RG8 C-series, Vol. 45 75-76; MG5 A1, 45733). By the summer of 1827, two companies of Royal Sappers and Miners (162 men in all), had arrived on-site at the request of Lt. Col. By and promptly took up residence in the barracks, which were still unpainted and sparsely furnished due to their uncertain future use (LAC, RG8, C-series, Vol. 45 75-77). Since approximately 30-40 wives and numerous children would have accompanied the men, the barracks quickly proved too small to house everyone and Lt. Col. By ordered that a cookhouse be built at the front of each barrack, which freed up space inside for additional rooms (LAC, RG8, C-series, Vol. 45 75-77). Two bake houses were also constructed upon Lt. Col. By's orders and leased to local bakers who initially supplied only Ordnance personnel with bread. However later, with the encouragement of Lt. Col. By himself, bread was sold to labourers at a low price so as to attract workers and avoid having to increase wages (LAC, RG8,

C, Vol. 47 45-47).

Some of the final additions to Barrack Hill in 1827 included a fence of cedar posts around it (to protect Ordnance property) and a flagstaff with the anticipation that Bytown would one day become a permanent and prominent military post (LAC, WO44, Vol. 18 345). For many years the barracks were a bustle of activity that was focused on the Rideau project. On January 5, 1832, one of the central barracks being used as a mess room and officers' quarters was lost when a fire broke out in the kitchen, quickly spreading to the entire building in a matter of minutes (LAC, RG8, C, Vol. 584 1). It was never rebuilt. Once the canal was finished the use of Barrack Hill would start a long and slow decline of military importance. During the Rebellion of 1837 the garrison size dropped significantly as soldiers were sent elsewhere and provoked a local militia (the Bytown Volunteer Company) to fill in during the absence of troops (De Jonge 37). When Queen Victoria selected Ottawa as the capital city, the military presence on Barrack Hill came to a symbolic and literal end as the land was to be transformed into the permanent seat of Parliament for Canada (De Jonge 40).

Hospital

One of the three main barracks would initially serve as a hospital and would have been located where the West Block of Parliament currently resides (De Jonge 31). The hospital had 20 beds and was originally intended to be used by those permanently employed by the Ordnance department (De Jonge 12). Because of serious need, a partition dividing the building in half would be added, leaving any free beds for civilian labourers (De Jonge 13). When malaria outbreaks became a serious problem in 1828, Lt. Col. By allowed the most serious cases into the hospital at his own expense (for which he was eventually reimbursed by the Board of Ordnance), and this would prompt him to request a system of health insurance for workers,

which was denied by the board (De Jonge 13). In the end, contractors would choose to set up their own system, or in many cases do nothing because of the added expense. The Royal Ordnance Hospital disbanded in autumn of 1832 when the threat of a cholera epidemic had weakened and other health services had emerged for the growing Bytown community (De Jonge 34).

By's House

As early as June 10, 1827, a progress report by Lt. Pooley, a painter and spokesperson for Lt. Col. By in the construction of a larger canal (Passfield 1980, 37-38), outlined that the village surrounding the area was slowly being developed and that Lt. Pooley and Lt. Col. By, along with their families, had moved from their initial residence in Hull and relocated to their new houses on Colonels Hill (now named Major's Hill Park) (Haig 79). There is little detailed evidence of the estate and the historical drawings that do exist differ in the scale and size of this house. It appears it was a one-and-a-half-storey rubble stone building, with two large chimneys and a large three-sided veranda, and may or may not have had dormers (Haig 79). The prominent location on top of the cliff was captured in the words of Joseph Buchetter (Surveyor General of Lower Canada), who visited Lt. Col. By in 1828. He writes:

From the verandah the most splendid view is beheld that the magnificent scenery of the Canadas affords. That bold eminence that embosoms Entrance Bay, the broken and wild the verdant and picturesque island between both banks and the occasional canoes, barges and rafts plying the broad surface of the Grand River, or descending its tumultuous stream, are the immediate objects that command the notice of the beholder (Haig 83).

By 1833 a footpath to connect the house to the Entrance Valley work site and Rideau Street had been established (Haig 79). When By was recalled to England, Major Daniel Bolton stepped into

By's role and residence (Haig 81). Eventually Major Bolton would return to England and very shortly after the house was destroyed in a fire on January 11, 1849 (De Jonge 25). The ruins would remain for many years as photos from 1861 provide evidence of their location and today there is a site marker (two large stones) in the approximate area where the building would have been.

Sappers Bridge

Sappers Bridge, positioned just south of the eighth lock, joining Upper and Lower Town, was a solid, heavy built structure with stones weighing several tonnes and of such strength that when it came time to demolish the bridge in 1912 to make way for a larger thoroughfare, dynamite failed to bring it down (Haig 73). The *Ottawa Free Press* wrote: "So hard was the stone, and so clinging and steel-like the grip of the ancient cement that even dynamite failed to wreck it" (Haig 73). In the end the demolition crew ended up dropping a two-ton weight multiple times from a height of seventy feet on the bridge, which after three hours finally brought it down (Van de Wetering 86). Sappers Bridge would be replaced by the Plaza Bridge, connecting modern-day Wellington Street in Centretown to the market district's Rideau Street.

3.6 Completing the Canal

In gratitude for the exceptional work done by a selected group of contractors, Lt. Col. By commissioned the creation of silver cups to be presented to these men (MacKay, Redpath, Drummond, Phillips, and White). Two of the silver cups are larger, measuring eighteen inches (46 cm) high and twelve inches (30 cm) wide with intricate floral designs created by some of Britain's most highly skilled silversmiths. The two larger cups were presented to MacKay and Redpath, one of which today is currently housed in the Bytown Museum (Mika 112). On the

cups the presentation date reads August 21, 1831, a date by which Lt. Col. By anticipated the canal's completion—however it wouldn't be until the following spring that the whole canal would be completed and officially opened (Mika 112).

By the fall of 1831, the Rideau Canal was completed, but it wasn't officially opened until the spring of 1832, when a ceremony, in the form of a steamboat cruise on the *Pumper*, carried By and his family and several contractors and dignitaries the entire length of the canal, celebrating in the various settlements that had sprung up along the waterway (Andrews 163). Lt. Col. By would have been oblivious to the fact that orders had been made for his recall to England over the matter of overspending, as he did not receive them until August 11, 1832 (Andrews 163).

{4} DISEASE

4.1 Introduction

Construction deaths occasionally happened, but disease was by far the biggest killer on the canal. In the early days of canal construction, many men, women, and children got sick or died as a result of contracting what many first-hand descriptions referred to as “swamp fever.” Many historians believe that this was in fact a severe type of malaria, no doubt caused by working in or around swampy, mosquito-infested areas of the canal, coupled with poor sanitary conditions. “Malaria” is an Italian word meaning “bad air” (mal=bad, aria=air) (Wylie 35) and today it is understood that it is transmitted through infected mosquitoes. Canal workers were constantly surrounded by the threat of disease, and it was especially prominent in the dead of summer when mosquitoes were most numerous. Although malaria was the most prominent of diseases that affected workers, workers' families, and contractors, charbon, small pox, and “the ague” (a general term for sickness) also caused delays in canal building as workers fell ill. Cholera

and typhus would also present themselves in Bytown, as well as in most parts of the global community.

4.2 Malaria

Malaria still exists in the contemporary world, but thanks to enormous medical advances the mortality rates of malaria today are strikingly lower than when the canal was being constructed. In the early 1800s, malaria was thought to be transmitted through bad air, and working on that assumption very specific efforts to clear the land around construction sites seemed to be the only preventative measure thought to decrease the impact on workers and canal progress (Watson, 1996 web). There is no solid understanding of how many people were affected by malaria on the Rideau Canal or how many succumbed to the disease, but historians have estimated that as many as 500 died from it (Watson, 1996 web).

In one of the best first-hand accounts of how this disease can ravage the mind and body, John MacTaggart, who suffered (and recovered) from a bout of malaria while in Canada, writes a vivid account:

The *fever and ague* of Canada are different, I am told, from those of other countries: they generally come on with an attack of bilious fever, dreadful vomiting, pains in the back and loins, general debility, loss of appetite, so that one cannot even take tea, a thing that can be endured by the stomach in England when nothing else can be suffered. After being in this state for eight or ten days, the yellow jaundice is likely to ensue, and then *fits* of trembling—these come on some time in the afternoon, mostly, with all. For two or three hours before they arrive, we feel so cold that nothing will warm us; the greatest heat that can be applied is perfectly unfelt; the skin gets dry then the *shaking begins*. Our very bones ache, teeth chatter, and the ribs are sore, continuing thus in great agony for about an hour

and a half; we then commonly have a vomit, the trembling ends, and a profuse sweat ensues, which last for two hours longer. This over, we find the malady has run one of its rounds, and start out of the bed in a feeble state, sometime unable to stand and entirely dependent on our friends (if we have any) to lift us on to some seat or other. (Vol. II 16-17)

As this account suggests, if one were lucky enough to survive, the journey to health would have been painful and exhausting.

4.3 Disease and Treatment

During the summer of 1828 the first large-scale outbreak of malaria ravaged the entire length of the canal and drastically slowed canal construction. Workers who contracted the disease were unable to work, unable to receive medical help due to lack of funds or lack of medical staff, and therefore required to be cared for at home. This left the women and children of workers susceptible to the disease as many families lived near the work sites and were subject to the same living conditions as labourers. At the peak of the mosquito season, usually summer, sleeping became a horrendous test, as MacTaggart writes: “when we wake the face is covered in blood and if the hands or legs be exposed, they are rendered frightful to look at and the feet will not go into the shoes or boots they have been accustomed to” (Vol. I 184; Vol. II 2). The 1828 outbreak also created a sense of panic at sites, as there was a mass exodus of healthy workers who wanted nothing to do with the disease (Valentine 24). The abandoning of diseased sites (or desertion) was also evident among the Royal Sappers and Miners and despite the bribe of 100 acres (40 hectares) of free land if they stayed until the canal’s completion, 35 of the approximate 160 Sappers and Miners abandoned their posts (Ptychuck 3). Malaria did not impact the

Bytown lock station as hard as other lock stations such as the Isthmus lock station, which saw the greatest suffering and death rates of them all (Patychuck 3).

Treatment

Treatment options were minimal and generally ineffective. Doctors experimented with bleeding, use of lead or mercury was tried, and of course praying was used profusely. In many cases, it was a matter of letting the bacteria run its course and trying to mediate the symptoms, given the provisions available at the time. While there were many different doctors who supplied their services on the Rideau Canal, there is limited information about what kinds of provisions they had at their disposal. One of the better-known doctors, Alexander Christie, did keep many notes and records about his time working on the Rideau line. One source suggests that although Christie completed his formal education in Aberdeen, his degree was not in biology or any other health-related field, but in mathematics (Mika 193). Although documentation of legitimate medical training was never verified, self-proclaimed Dr. Christie still treated many patients. His medical records show that between the months of May and December 1827, the most active period of malaria, he treated on average 160 patients a month and as many 1,278 in total with treatments varying from one to 25 days in length (LAC, MG 24 I9, Vol. 6 1987-2031). It was also well known to many that Christie often treated at his personal expense women and children who could not afford to pay for services (Valentine 58).

Quinine, a bark extract, was one of the only understood treatments for malaria. Due to its perpetual short supply, it was common for only people in positions of power to obtain it, as they could afford to pay the exorbitant price, leaving the poor unable to acquire it (MacTaggart, Vol. II 18). A Bytown resident named William Bell wrote of his experience in his diary dated March of 1827:

On Monday being my well day, I was not quite so bad; but on Tuesday, O what I suffered! The shivering fit lasted all the afternoon, and it was the severest I had ever experienced. Next day I was fortunate enough to get some quinine, for at this time it was so scarce that, when an ounce could be procured at Montreal, it was sent by post, and long before it arrived it was all bespoke, and even paid for. It was sometimes as high as 16 Dollars an ounce, but such was the scramble to get it, that no one complained about the price. To me, from 6 to 10 grains always producing a certain cure. Taking this quantity, it stopped the ague, and I got better every day. (McKenna, 84-85)

This incredibly potent treatment was so expensive and in limited supply that the affluent members of the communities were the only ones who realized its benefits.

MacTaggart also described a skin affliction known as charbon that seemed to overwhelmingly affect French Canadians. Charbon, known today as anthrax, was compared to yaws, a tropical disease resembling syphilis³ (Valentine 59). Without proper testing the exact causes of many of the ailments found along the canal line can only be speculated by historians today. Additionally, a disease that was then listed in medical notes as “consumption”—now known as pulmonary tuberculosis—was common among canal workers and spread very quickly. Given that the common treatments included horseback riding, liverwort, and Caledonia Spring Water, it is likely that many of the labourers afflicted by consumption did not survive the disease (Valentine 59).

³ It is likely that MacTaggart frequently mistook syphilis for yaws, as their symptoms were very similar. Sexually transmitted diseases like syphilis were very common in frontier settlements.

4.4 Support for the Sick

Malaria does not discriminate among victims, affecting males and females and spanning all classes, ages, and ethnicities. A person's status within a community did play a large role in how that person was treated, or not. For those on military payroll, a system was created for employees (Royal Engineers, Sappers and Miners, and civilian functionaries) that would deduct a certain amount from the weekly pay so that in the event that if you did get sick, your treatment would be covered. This acted as a basic form of health insurance (Wylie 35-36; Bush 28-29). If, however, you were on the other end of the spectrum as a contracted manual labourer, there was very little chance you could afford to be seen by a doctor, let alone be able to pay for any helpful treatment.

The cost to see a doctor would vary between sites and doctors, but it has been noted that at one site it cost £1, which was beyond the financial reach of the labourers who struggled to stay warm and fed since if they did not work due to illness, they did not get paid (Wylie 36). At one point, Lt. Col. By proposed applying a scheme by which the health cost would be deducted from crown payments to contractors whose labourers got sick (much like the one the military had established), however it was felt that it would cause litigation issues since it was not part of original contracts and would require more medical establishments beyond the capabilities of the military. Instead, contractors would decide what kind of care they would or would not provide (Wylie 36). This lack of treatment for labourers was compounded by the reality that living conditions and long work hours exacerbated the likelihood of reinfection.

4.5 Cholera Wharf

Malaria was not the only disease that changed the landscape of Bytown. As the canal was nearing completion, cholera, an intestinal bacterial infection that is highly contagious, was

becoming a global epidemic. Cholera was present on many of the ships that carried immigrant workers to this new land and when it showed up in Quebec, it quickly spread to Upper Canada (Legget, 1986 58). The hysteria and panic that arose from the spread of the deadly disease debilitated the town and prompted immediate government action (Haig 103-104). One of the most significant steps taken to mediate the problem in Bytown was the creation of a special wharf, known during that time as Cholera Wharf, which could isolate those newly arriving infected passengers and minimize the spread of the disease. A temporary hospital was also quickly created for isolation and to minimize the hysteria in the community (Legget, 1986 263).

The presence of the epidemic and the escalating death rate would spur on the need to have a better health care system for the growing town. In June 1832, a Board of Health (consisting of the mayor, medical officer of health, and three appointed ratepayers) for Bytown was established to monitor the presence of Asiatic cholera, which was increasingly evident among emigrants on incoming ships and threatened the entire community (Brault 132-133). With the disappearance of the disease a few months later, the board disbanded and would reform briefly in 1834 to deal with a minor plague and again in 1847 with the outbreak of typhus (Brault 132-133). Although this epidemic would spur on the creation of the first Board of Health for Bytown, it also perpetuated the existing hostility towards immigrants, whom many blamed for bringing the disease to the area (Haig 103). After the threat of the cholera plague diminished, this wharf would become a significant reason for the development of Lower Town due to its location at the foot of the canal. It provided visitors, businessmen, and passing labourers access to local merchants who had established a variety of trades and merchant shops along present-day Sussex Street (Haig 94).

4.6 Remembrance

Before the installation of a local cemetery, Bytown's deceased were ferried across the Ottawa River to be buried in the cemeteries of Hull, but as the death tolls rose mass burial was carried out in unmarked graves (Mika 101). A half-acre (less than a quarter of a hectare) of land, located between present-day Elgin and Metcalfe streets and west of the canal, became the burial ground for the early people of Bytown; once the land was cleared, it was fenced in by a 10-foot (3-metre) tall cedar posts, sharpened at the top and secured with iron nails (Mika 101). The graveyard was divided into three sections that separated the deceased into their respective churches (Presbyterian, Anglican, and Roman Catholic) and eventually a fourth section for Methodists was added (Ross 1927, 123-125). As more churches were constructed, a more organized process of burying the dead emerged as well as a permanent cemetery. The new cemetery, placed in Sandy Hill and shown on maps as early as 1845, retained the idea of four different sections, each affiliated with their own church, for the deceased (Mika 28). What made these cemeteries unique is that they were right beside each other, a practice that was not common back in Europe. Today there is a Celtic cross adjacent to the Ottawa Locks that acknowledges the human cost of the Rideau Canal project and it is intended to honour those nameless Irish workers whose final resting spots remain unknown.

{5} LABOUR

5.1 Introduction

Today Ottawa is a multicultural city that over time has seen immigrants from all over come to call it home. During its founding years Bytown and the surrounding areas already had a mixture of residents made up of the First Nations communities, French Canadians, Americans, British, Scottish, and Irish populations. For many residents, the voyage started with recruitment in their homeland, followed by making the treacherous voyage to the New World—a truly

daunting task. Establishing a family and a life in a new landscape presented many challenges for newcomers who had to adjust to the weather, the language, the lifestyle, and the food. It was those differences in cultural traditions, eating customs, religious affiliation, and common attire that may have created tension at times but also created a foundation of diversity that has since been built upon.

5.2 Recruitment

In the United Kingdom specifically, the growing populations and limited employment opportunities made emigration an attractive option, as many of the future canal workers arrived in Canada in search of work and a better life. According to author Jaime Valentine, it was the combination of two factors that accounted for the extreme increase in immigration to Canada. Firstly, a population crisis in Lower Canada caused an internal migration to occur which saw French Canadians relocate into cities⁴ (Bytown included) where they heard there was work to be found (Valentine 2). Secondly, Lord Bathurst introduced a government-assisted program offering passage, provisions, land grants, and tools to those willing to emigrate. They were subsequently supported up until the first crop was harvested (Valentine 89-90). This scheme attracted nearly 600 Scots in 1816 and led Peter Robinson to introduce a similar strategy for the Irish in 1823, providing 500 Irish Catholics assisted resettlement in Canada (Valentine 89-90). British (1817) immigration was only made affordable when timber ships from Quebec gave cheap passage, and unlike ships to America, one adult was allowed to bring three children (Valentine 90).

It was often the case that a recruiter was sent to different parts of Scotland, Ireland, and England to recruit immigrants or specific tradesmen to Canada. In many cases, the recruiter's

⁴ The date and reason for such a "crisis" in Lower Canada are still debated by historians today.

work involved travelling from town to town—dispelling myths or misconceptions in negative rumours that many had heard about life in Canada. As Peter Robinson recounted after being sent to Ireland on a recruitment mission in 1823, aggressive salesmanship was often needed to convince the Irish to immigrate to Canada. In his report he writes:

I began to advertize for emigrants and to distribute copies of the terms on which the Government was disposed to send them to Canada before the end of the month I had distributed 600 tickets for embarkation, a greater number than I could have taken, but I acted on the presumption that some would keep back from sickness or imaginary fears and apprehensions or the advice of friends. (Archives of Ontario)

Peter Robinson presumed correctly, as of the 600 tickets he distributed amongst many different towns, only 460 were eventually claimed (Archives of Ontario). For those who could read, “emigration guides” were also another highly used way in which material about all the positive and potentials the new land held could be obtained.

In the 1830s, the Colonial Land and Emigration Commissioners (CLEC) were the primary organization under which Britain’s colonies (Australia, Canada, New Zealand, etc.) were targeted to encourage immigration and populate the colonies (Olive Tree Genealogy). Under this scheme, young married couples were viewed as the ideal candidates and assisted passages, or free voyages sponsored by CLEC, could also be granted to people under 40 who would be capable of sustaining themselves in the New World through labour (Olive Tree Genealogy). These individuals had to be in good health—having received their smallpox vaccine prior to emigration—and of amiable character, and favoured occupations included shepherds and other agricultural occupations for men and domestic or farm servants for women (Olive Tree

Genealogy). Many of the people who took advantage of these schemes might not have otherwise taken the risk of immigrating.

5.3 Making the Voyage

Once the decision to move was made, preparing for the voyage was the next part. Emigration guides might have provided a written account of what to expect, but nothing compares to seeing and experiencing it yourself. Setting sail from Ireland, Scotland, or Britain would have dazzled the eyes of any travelers, as the sights and sounds experienced on board would have been something one had never experienced on land. Many voyages, carrying both passengers and cargo, were made at the turn of the nineteenth century. Passengers sought out work and a new life, and cargo and trade brought a variety of goods that could not be found in the homeland. On one such voyage on the *Brunswick*, which left Cork Harbour, Ireland, on June 13, 1823, passenger Edward Talbot recounts the hardships of extreme seasickness, as it seemed to affect most passengers, especially those who had never experienced travel by boat, within a mere few hours of leaving land (26):

Seasickness would pass; however for those unfortunate souls on board who would die en route, the only gravesite they would know would be in the deep depths of the ocean. By the time the *Brunswick* had arrived in Quebec, 43 days later, twelve deaths had occurred and sadly, all of them were under the age of fourteen. (Talbot 27)

However, as MacTaggart notes, “the Ocean may be considered the best place for burial; that is, a sufficient weight may be hung to a dead body to sink it beyond the reach of all voracious fish, where no shark can follow,—this is a consolation to the friends of the deceased,—and also where no resurrectionist of earth can disturb him”(Vol. I 15).

Many other voyages would have similar fatalities. For example, it is interesting to read the transcribed medical notes from a voyage made from Cork, Ireland, to Quebec in 1825, written by John Tarn. It reads:

3 May 1825: embarked a party of 101 emigrants examined into the state of health of each separately none requiring medical assistance.

4 May 1825: vaccinated 14 persons being the whole of those on board who have not had the small pox, in the evening received 241 emigrants, examined each separately none labouring under infectious diseases.

8 May 1825: vaccinated 16 children making a total of 35 who have not undergone the small pox and cowpox.

11 May 1825: at 5 am sailed from Core of Cork.

14 May 1825: vaccination has failed in every instance, while it has yet been attempted; having two glasses remaining, I this day re-inoculated eight children.

20 May 1825: the vaccine matter supplied has proved to be wholly inert for in no instance has there been the least appearance of its having taken effect.

12 June 1825: at 5 pm arrived at Quebec. (Schulze, web)

Even with medical aid on board and preventative measure in place, death was always a risk when making a voyage.

Voyages would have varied, depending on whether the winds were against or flowing with the direction of the ship. Once the ship would near land, fog became the real challenge. Edward Talbot recounts in his letters that “for almost two days, we were unable to distinguish land in any direction; and having no pilot on board, we found it impossible to ascertain the proper channel,” and despite the firing of guns, and the constant blowing of the fog horns as a

signal for other vessels, fog would still prove to be too dense in areas to navigate, forcing vessels to simply wait until it lifted (29-30). Once through the fog, the voyage would typically end at Quebec and passengers who wished to continue on into other parts of Upper and Lower Canada would do so on a smaller vessel and at varying prices.

Sightseeing on Board

Although many voyages brought death and sickness, there were many instances where passengers were dazzled with new sights and sounds that the ocean and ocean life presented. John MacTaggart meticulously recorded many of these new experiences on his voyage. He writes: “When about 600 miles west from the Land’s end of England, we were surrounded by winged moth or butterfly swarms, with ash coloured wings. They kept bobbing and dancing about in the air, sometimes alighting on the smooth face of the deep, then starting up again” (Vol. I 2). Passengers could also witness whales, salmon, herring, mackerel, halibut, and a multitude of birds with plumage that varied greatly from similar land varieties, including storm petrels (MacTaggart, Vol. I 10-11). For many, these sights would be the first of all the new wildlife and natural sights they would experience in the years to come.

5.4 Working Conditions

In a time well before the existence of health and safety standards in the workplace, almost all jobs came with potentially fatal risks. On the Rideau Canal, working conditions were harsh, highly physical, and dangerous. In the summer months, sleep would provide the refuge from the heat of the sun and the swarms of mosquitoes. The pure physicality of the work would often take a toll on the mind and the body. During the hot and humid conditions in the summer months, workers would often work fourteen to sixteen hours a day, six days a week (Wylie 27).

While some sites were not active in the winter, those operated by Thomas McKay, John Redpath, and Philemon Wright did, and working in such extreme climatic conditions was most definitely a physical and mental challenge (Wylie 27). At many sites, tobacco and alcohol were given out for free, especially in the cold winter months, with the hopes of encouraging the men to keep working (Legget 40; Wylie 29).

Each lock station was under the command of private contractors who controlled workload, work type, wages, and living accommodations. At each site there was a mix of workers made up of the common labourers, skilled craftsmen, site contractors, and Royal Engineering military staff, and although these four professional groups often mixed well at sites, each one came with its own hierarchy of wages and treatment (Plousos 48). Each and every lock station saw the common workers moving from site to site in hope of less dangerous work for better pay. Despite this, with such an abundance of cheap labour available, contractors got away with offering low wages, on top of providing no medical services but being sure to charge for room and board and other basic provisions. Skilled craftsmen were in short supply, but commanded and maintained a certain degree of respect (Wylie, 19). The labourers, on the other hand, were treated somewhat like a commodity. Workers' wages depended on the contractor; the common labourer receiving between two to six shillings per day; rates were adjusted for seasonal demands and for the provision of room and board (Wylie 20). Workers were usually hired a month at a time, but in cases where room and board was provided, a work contract was mandatory and could range from two months to two years (Valentine 15-16). Many workers could not read or write and would sometimes sign documents with an "X"; even worse, some contracts stipulated that wages would not be issued until workers fulfilled agreements, leaving many workers unfairly at the mercy of the contractors (Valentine 15-16).

In surveyor John MacTaggart's observations on blasting, he claimed that accidents and deaths among the Irish labourers were as a result of their own lack of skills and sloppy work habits (Vol. II 245-246). In reality, the work was just plain dangerous. Some workers were blinded by explosions (LAC, WO55, Vol. 869, Reel B-2814 130); others lost legs or needed amputations (LAC, WO55, Vol. 867, Reel B-2812 124). These incidents happened to both the experienced and inexperienced worker, especially when it came to blasting procedures since inconsistent explosive material was difficult for even the trained Sappers and Miners to anticipate. At one site, blasting killed six out of 21 of the Royal Sappers and Miners stationed there (LAC, WO 25, Vol. 2972 320-1). It was a risk that poor workers were willing to take and in many cases expected.

5.5 Living Conditions

Compared to the comfortable residences of most Upper Town citizens of Bytown, many of whom lived in stone houses on large lots they owned, most labourers lived in Lower Town in cramped, makeshift housing. Lower Town residents were forced to pay the cost of rent required to live on government land, and more often than not even if they had money, labourers did not make enough to experience any of the luxuries of the Upper Town resident. Instead, labourers found comfort in the simple things, like smoking tobacco and drinking alcohol with fellow workers who understood the hardships. Workers lived in cramped and unsanitary shanties, essentially facilitating the contraction of disease. In the winter, living conditions were so harsh that the cold often led to the workers getting frostbite. Provisions of all sorts were available, but for most labourers, their time and wages went to keeping warm and staying fed (Wylie 28-30).

The majority of provisions and food were regulated through government stores in the hopes that the site contractor would not take advantage of unsuspecting workers. By tried to

ensure that all the workers were well supplied because “inflated food cost would mean demands for higher wages from the workers which would inevitably push up the final cost of the canal” (Valentine 34). Workers did not have a lot of choice in what kinds of food they ate, as records from government stores outlining the kinds of provision available imply that many “subsisted on flour, biscuits and bread, fresh beef, salt pork, pease, Indian corn, salt and rum” (Valentine 37). The task of feeding the workers along the canal line was daunting as the amount of provisions available was less than the overall demand. Luckily for Lt. Col. By and many of the contractors, local farmers would also augment supplies during certain seasons by selling some of their harvest at constructions sites, which would not only take some pressure off the supply chain, but also provide them with a decent income (Valentine 34). The struggle to stay fed and healthy was a problem not just for workers, but also for many settlers who tried to carve out a life on the harsh land.

As you travelled up and down the Rideau Canal in 1827, “there is scarcely a hut or log-house here but is filled with sick and needy, who are suffering, not only from Disease, but also from Hunger, and from almost every other misery concomitant upon the want of the common necessities of life” (LAC, MG24, E6 9). It was not only the disease and hunger that plagued labourers, but the weather. Most Irish immigrants were said to have arrived with whatever clothes they had on their back, most notably “breeches that bind at the knee and stockings” (MacTaggart, Vol. I 290); this left them not only unprepared for the seasonal extremes of the Canadian climate but also more susceptible to sickness and difficulty working in the bush (LAC, RG8 C, Vol. 43 212). Knowing that the cold would impact the workers, and therefore slow construction, Lt. Col. By requesting financial support for bedding, he writes home: “at present the poor fellows lay with nothing but their rage to cover them and their numbers are increasing,

and the rainy season coming on. I dread the effects of Sickness and feel convinced that the distribution of bedding will be of the greatest importance” (LAC, RG8, C, Vol.43, 212). Lt. Col. By did purchase 1,000 blankets at his own expense (for which he was eventually compensated) and distributed them among the poor (LAC, RG8, C, Vol.43, 212). Unlike the Irish, the British and French Canadians were thought to be better prepared as many of them at least had some form of boots or shoes, moccasins being preferred by the French Canadian (Wylie 30). Among this group, “the typical dress included trousers, shirt and various combinations of vests, frocks, jackets, and headgear...Shirts seem to usually have been of linen...Some French Canadians purchased colourful sashes for which they are well known....and a few sheepskin and buffalo robes which some of the artisans could afford to buy” (Wylie 30-31). Without the proper clothing, winters would have been dreadfully long and unbearable.

In Bytown the effort to create more permanent lodging for workers became evident after the first winter. This prompted Lt. Col. By to build “two civilian barracks during 1827, costing £900, east of the lower locks at the corner of Williams and Rideau Street in Lower town to house 200 workers employed by contractors” (De Jonge 9). These barracks would eventually be converted into a hotel, but for the duration of the project they would house many workers who might otherwise not have a roof over their heads (Newton 86). As for bedding, MacTaggart’s observations of Upper Canada note that it “would have consisted of little more than a plank, perhaps cushioned with straw stuffing, on which several men may have struggled to sleep at one time” (Vol. I 292). Many didn’t have the option of living in the barracks, nor the ability to afford the rent of government property, and so were left with few options. These desperately poor workers scraped together materials to construct makeshift shelters and congregated their shacks along one part of the bank of the Rideau; this area became known as Corktown (Valentine 45).

Corktown was on government land and despite the efforts of military staff to repeatedly tear down the “community of crude hovels, mud huts and caves burrowed into the side of a sandy hill,” the workers’ persistence paid off and Lt. Col. By was forced to allow them to squat for free (Valentine 45).

5.6 Life after the Canal

With all labourers suddenly out of work upon the Rideau Canal’s completion, many of the unemployed looked to Bytown’s timber industry, which had been well established at this time thanks to the pioneering efforts of businessman Philemon Wright in Hull; in 1829, three years before the waterway’s cessation, there were already 2,000 men employed by the lumber industry, producing more than one million cubic feet (28,317 cubic metres) of timber every year (De Jonge 3). For Bytown labourers, it is likely that some workers moved on in search of work and some went back to their homeland, but many tried to transfer their skills to the timber trade. With the sudden influx in available workers, the lumber industry expanded further, becoming world renowned. It was Philemon Wright’s son, Ruggles, who traveled to Norway and Sweden, bringing back a new Scandinavian design of a “single-stick slide,” allowing timber rafts to travel down slides without being disassembled (Lee 50). This model was used throughout Canada by the mid-nineteenth century and came to be known as a representation of the sensational timber trade in the Ottawa Valley (Lee 51).

The timber of the Ottawa valley was also considered sensational due to the size and strength of the lumber being harvested. A clergyman of the region once stated that while working in the timber trade in the winter of 1844, he aided in the squaring of a timber no less than 73 feet (22 metres) in length with a 24 by 25 inch (61 by 64 cm) girth (Lee 60). These measurements are not so surprising when one considers that many of the pines that once

occupied the hilltop of present-day Parliament Hill measured 180 feet (55 metres) high by 16 feet (5 metres) around (Lee 18). Bytown thus became a timber town and dealt mainly with transshipments along the river (De Jonge 42). The lumbermen in the Ottawa Valley dealt with imported supplies most often from Montreal and the United States and catered also to the lumberjacks travelling to shanties in the autumn (De Jonge 42). The timber trade provided many Bytown residents with employment and business opportunity.

{6} BYTOWN

6.1 Introduction

When Lt. Col. By arrived in the area that would eventually assume the name “Bytown,” he may or may not have known that his decision to settle here would change the face of the social and political landscape of the province and eventually the whole country of Canada. By was a man of grand vision and shortly after he voyaged from England on the ship Endeavour in the spring of 1826 to Montreal, he made the decision to establish the Rideau Canal military and operation headquarters near Entrance Bay (LAC MG12 W044, Vol. 15 5). This single decision would foreshadow the eventuality of it being selected as the capital of Canada, but there was a lot of work to be done to clear land and establish some basic order to where residence and workers would live. This meant first overcoming some of the challenges of the landscape. During the lead-up to the construction and beyond, the settlement would see itself grow as more and more people of different social, cultural, ethnic, and religious backgrounds came to work on the canal in a variety of capacities.

6.2 Original Settlements

The Ottawa River is about 1,287 kilometres (800 miles) long and holds significant historical importance in the development of Canada. For many centuries before the arrival of Europeans, the river served as a line of communication and trade for surrounding First Nations clans who named it Kitche-sippi (meaning “grand river”) (Brault 31). Both the First Nations communities and fur traders who used the Ottawa River as an access point to local communities or hunting ground were very familiar with this area of the river because of the Chaudière Falls. Everyone who wished to travel west on the waterway was forced to portage their goods around the intensity of this falls (Mika 26). At the spot where the portages would naturally take place, a small European settlement was established named Bellows Landing, after one of the first settlers, Caleb Bellows and family (Legget, 1986 252). It was in this village that Mrs. (or “Mother”) Firth ran her infamous pub. Bellows Landing was considered the oldest part of what would be deemed “Bytown” in the *Kingston Chronicle* on March 9, 1827; before this, the region was referred to as Chaudière Falls, Shier Falls, Richmond Landing, and Nepean (Mika 19).

When By arrived in the fall of 1826, the only pathways from Bellows Landing and Entrance Valley were those that previous surveyors had created, and the only significant clearings in the area had been done by the first settlers. The 1826 survey of Gloucester and Nepean consisted of only six houses and a handful of log cabins, showing how sparsely populated the south side of the Ottawa River was (Legget, 1986 252). Some of the first settlers on the south side included: Ira Honeywell, Bradshaw Billings, Captain Wilson, Caleb Bellows, Ralph Smith, Issac Firth, and Nicolas Sparks (Legget, 1986 252). The north side of the river was another story. The well-established town of Hull was founded in 1800 by timber baron Philemon Wright, who is said to have suggested the idea of a canal long before Lt. Col. By’s

arrival (Legget, 1986 12). Once on land, the area to the east of Entrance Bay was essentially a cedar swamp, and considered unfavourable and unhealthy compared to the west side, which was not only on higher ground, but could be more easily cleared. It was for this reason that Lt. Col. By selected the west side to set up the military headquarters; this area would become known as Barrack Hill and the east side was left a swamp until the construction process required it be drained.

6.3 Founders

Many people credit Lt. Col. By as the founder of Ottawa, but Lord Dalhousie's role in planning for not only a settlement, but eventually a capital city, cannot be forgotten. Before the canal project had been made publicly known, Dalhousie swiftly purchased lots A and B of concession C in an area known then as Nepean Township (Brault 58). It was purchased from Hugh Fraser for £750, and Dalhousie immediately transferred the tract of land to Lt. Col. By in a letter dated September 26, 1826⁵ (Brault 58). In the letter, Dalhousie tells Lt. Col. By of his plan:

I take this opportunity of meeting you here to place in your hands a sketch Plan of several lots of land, which I thought it advantageous to purchase for the use of Government, where this Canal was spoken of, as likely to be carried into effect. These are not only the site for the head locks, but they offer a valuable locality for a considerable village or town for the lodging of Artificers and other necessary assistants in so great a work. I would propose that these be correctly surveyed, laid off in lots of 2 or 4 acres. (LAC RG8 C Vol. 42 97).

⁵ Many historians credit this date as the creation of Bytown.

The letter goes on to outline the ideal price of rent, along with a “condition of building a house within 12 months from the date of the ticket” in order to ensure that permanent development began right away (LAC RG8 C Vol. 42 97). Lt. Col. By sent his reply letter dated November 25, 1830, reporting that many of the ideas laid forth by Dalhousie had been followed, and although rent payments varied, the town was taking shape (Brault 58). By 1843, a resident noted the “streets are broad and the houses partly built of stone, brick or wood, are erected with considerable proportion of taste and elegance” (Barker 46). The aspirations of Dalhousie and Lt. Col. By, the founding fathers of Ottawa, were being realized.

6.4 Population Growth

With any frontier settlement, it takes time to build a community with the amenities to attract more inhabitants and Bytown was no exception. Before work on the canal began, the entire white population of what today would be the province of Ontario stood around 150,000 people, most of whom were concentrated along the St. Lawrence River, and the well-established town of Kingston stood at fewer than 3,000 people in 1825 (Bush 1). However, when Lt. Col. By arrived in 1826, there were few to no inhabitants on the south side of the Ottawa River. With the undertaking of the canal and the instant demand for workers, new immigrants quickly filled the gap. From 1827 to 1830 the total emigration to Canada went from 12,648 to 50,254 and the population of Upper Canada nearly doubled from 177,174 to 321,945 (Creighton 259, 261). Bytown would receive many of these immigrants and hundreds of others would continue down the Rideau waterway in search of work. According to one York newspaper, *U. E. Loyalist*, Bytown in 1827 was said to have as many as 2,000 residents and growing; by 1830, estimates reached about 3,000 people, and fluctuated depending on the seasonal labour needs for the canal (Bush 31).

6.5 Property Disputes

In 1821, before the canal had begun, the Ordnance Vesting Act was passed. This act stated that all land occupied and acquired by the military for Rideau Canal building purposes fell under British government jurisdiction (De Jonge 45; Raudzen 131). Natural resources on this vast land were thus British property and could not be purchased—and subsequently managed—by the Bytown people. Bytonians were able to lease the land that was subdivided into plots for farming and simple habitation. Canadians argued that this British law did not apply, as Canada, although still a colony had representative institutions (De Jonge 45; Raudzen 131). This injustice remained until the British Treasury decided that the transfer of Rideau Canal property to the Ordnance Department in 1843 was in the Department's best interest. This shift permitted the sale of property to tenants and allowed the new owners to build more permanent stone housing throughout Lower Town (De Jonge 45; Raudzen 131).

On top of the Ordnance Vesting Act, the Rideau Canal Act of February 1827 gave Lt. Col. By the power to make all decisions concerning government land and the canal's path through it (Mika 85). Several land lawsuits were filed during the building of the Canal. Nicholas Sparks's claim is perhaps the best documented, but a farmer named Peter Cornish also appears in several correspondence documents from this time. The canal carved its way through the land owned and cultivated by Sparks and Cornish alike, removing it from their ownership and taking away other benefits that come with property ownership. Cornish had only a small plot, but the canal's intersection with the farmer's land caused appreciable loss resulting in his inability to pay taxes, subsequent imprisonment, and illness ultimately causing his premature death (LAC, WO55, B-218, Vol.16 378-381).

Nicholas Sparks on the other hand constituted a much larger and longer lawsuit. The major land dispute of the 1840s was about 100 acres (40 hectares) west of Entrance Bay and south of the barracks,⁶ which had once been fully owned by Nichol Sparks (De Jonge 46; Raudzen 106-107). Sparks sold some of his land in 1827, but By appropriated additional land, using the Rideau Canal Act, an act that allowed the Ordnance to obtain land for canal purposes. Years after the canal was completed, Sparks sought to reclaim his land, which was no longer serving or being used for canal or military purposes (Legget, 1986 256). By would argue that it was still in the interest to retain this land in case of the potential future fortification efforts, but in the end Sparks would win his lawsuit and his land was returned in 1848 (Legget, 1986 256). The retention of this land influenced the physical growth because it was in a prime location and perpetuated the divide between Upper and Lower Town communities (De Jonge 46).

6.6 Powershifts

By 1847, Bytown's population was over 7,000, and the settlement was large enough to be incorporated as a town (Reid ci). Incorporation carried with it many benefits, including the ability to establish an official municipal authority and regulations; however, it also required that the British government relinquish control over some of the land it held. With the canal completed and no recognizable military threat on the horizon, the British government, after much debate and delay, finally agreed to the terms of incorporation, and Bytown was officially incorporated as a town on January 1, 1850 (Eggleston 108). There was also a demand by citizens for a shift in power of property ownership. In order to participate in the first electoral process held in Bytown, and to vie for a seat in the Legislative Assembly of the United Canada's,

⁶ Today this land would be the area between the canal to the east, Bank Street to the west, Wellington Street to the north and Laurier Street to the south (Legget, 1986 256).

candidates and voters alike were required to be permanent, mortgage-free landowners. Since the majority of Lower Town residents were permitted only to rent and not to own government property, many citizens felt intentionally excluded from participating, leading them to distrust the system of governance overall. In one election, held on March 8, 1841, only 85 of the 3,122 residents were eligible to vote (Haig 86). This widespread disenfranchisement based solely on property ownership—and, by extension, proof of wealth—highlights the unbalanced electoral system of early Bytown. This shift permitted the sale of property to tenants and allowed the new owners to build more permanent stone housing throughout Lower Town.

{7} COMMUNITY

7.1 Introduction

With any developing community, new inhabitants are often in states of transition and transiency, which means it, can take some time to become organized on a social level. This was the case in Bytown, since residents had come from different places and cultures and brought with them differing expectations. Despite this, localized groups often tried to mobilize people and establish organized social institutions. Some were successful, others were a product of the time, and some have transitioned and evolved over the years and are still active in Ottawa today.

7.2 Local Leadership

In the early days of Bytown, various social and community groups emerged, with varying degrees of success. For example, on January 28, 1847, local citizens attended a public meeting to organize and establish the first Mechanics Institute in Bytown. After a few years of disorganization and additional attempts to mobilize support, the new incorporated Bytown Mechanics Institute and Athenaeum was successfully created in 1853 (Van Cortlandt 20-21).

They provided newspapers, educational literature, exhibits, and lectures to the local community about farming, business, lumber, and literacy to make up for the lack of provincial educational institutions and as a way for the working class to gain a better social and economic status (Haig 123). The first schoolhouse—known as the Fraser House—was built by John MacKay and originally used as a workers house until its conversion into a school for the young community members in 1837 (Maitland 60). Other groups and societies that emerged during the first half of the nineteenth century include:

Bytown Benevolent Society (July 1837)

To relieve the suffering of the poor and destitute (Serré 16)

Bytown Society for the Preservation of Public Peace (October 20, 1835)

To guard against lawlessness within the community (Serré 9)

Board of Health (1832)

To manage and attempt to control the cholera epidemic at both the hospital and wharf (Serré 111)

Irish Catholic Temperance Society (1845)

To fight against the “ills of the drink” (Serré 37,71)

Ottawa Valley Lumber Association (1836)

To deal with the violence within the lumber trade (Serré 51)

Society of the Ladies of Charity (1845)

To help the poor and destitute (Serré 76)

These are just a sample of the social organizations that sprang up in Bytown and each and every one of them played a role in both the good and bad aspects of the town’s development.

Health

Serving the health of the community was an enormous task, but one that would be necessary if the town was to be a healthy and prosperous one. In June 1832, the Board of Health, consisting of the mayor, the medical officer of health, and three appointed ratepayers, was created in Bytown (Brault 132-133). Its creation was mainly driven by the presence of cholera and it was tasked with monitoring the presence of Asiatic cholera, which was increasingly evident among emigrants on incoming ships and threatened the entire community (Brault 132-133). With the disappearance of the disease a few months later, the board disbanded and would re-form briefly in 1834 to deal with a minor plague and again in 1847 with the outbreak of typhus. It would not be until 1845 that the Grey Nuns of Montreal, led by Élisabeth Bruyère, came to Bytown to serve the weak, sick, and poor population (mostly Irish and French Canadians) (Van Cortlandt 18).

7.3 Brawling Bytown

Bytown in early 1827 was a dangerous place. “There is not an Evening passes—not even the Sabbath day excepted—wherein there is not a riot and general fighting,” noted one magistrate (LAC RG5 A1 Vol. 84. 45755). He continues that “the public peace is most dreadfully disturbed and the lives and property of the inhabitants in danger day and night in this new Town; by drunken, riotous persons employed on the works of the Rideau Canal” (LAC RG5 A1 Vol. 84 45755). Efforts were made to contain the violence, including setting up a boxing ring on Rideau Street for fighting; however, it was quickly abandoned, as gang-type battles were preferred among the men involved (Haig 111). Even when community members tried to establish some social pleasures, such as the first public fair held in Upper Town in 1829, a violent brawl over a horse race left a man and a horse with their ears cut off (Haig 111). Lt.

Col. By, being the individual in charge of those workers, took responsibility for the bettering of Bytown. Having been sent Royal Sappers and Miners who were of great benefit to the building of the canal in their technical knowledge and engineering expertise,⁷ and although highly satisfied with their work on the canal, the men would be pulled from work on the waterway in order to mediate the violence and disorder in Bytown (McKenna 22-23).

Although the presence of the Royal Sappers and Miners undoubtedly helped to improve security in the evolving town, the citizens of Bytown were still experiencing a sense of helplessness and uncertainty both economically and politically. The people of Lower Town specifically were feeling exploited by the Ordnance and the governing class of Upper Town (Haig 119). Bytown as a whole was culturally compelling, having theatrical performances, musical concerts, and other artistic contributions that stemmed from the garrisons, yet were overshadowed by violence (De Jonge 59). Lower Town should have been able to build great monuments to represent prosperity in the new town, but residents were unable to afford such extravagancies due to the many anxieties of the 1830s (Haig 119). In addition to being mere pawns under the control of the Ordnance, they were not given the right to vote unless proprietors of land; as Lord Dalhousie outlined in a letter in 1841, of 3,000 inhabitants, only 90 were permitted to cast their vote (De Jonge 44). Needless to say, political hostility was on the rise.

7.4 Lawlessness

Brawling between factions of new immigrants was so common that despite Lt. Col. By's use of his best Royal Engineers on street patrol in order to help quell the violence and disorder,

⁷ Lt. Col. By was particularly fond of the 7th and 15th Companies and acknowledged their abilities in a letter to General Mann in June of 1828 (LAC RG5A, A. Wilson to Hillier, 1827)

their influence was limited. As the violence progressed, residents formed their own Preservation of the Public Peace force, made up of 200 volunteer constables acting under the municipal council. These efforts did little to curb mounting unrest as many felt the municipal authorities only targeted specific people or groups. By the time a police force was established independently of the municipal authority in 1863, Bytown was already well on its way towards stabilization.

Jails

Although there was much brawling and unrest in Bytown during the years of canal construction, there were few places to isolate the offenders. To create even more room in the crowded barracks, a guardhouse (containing three jail cells) was seen as necessary by Lt. Col. By “not only for the accommodation of the Guard, but also to secure a proper place where Prisoners punished either by their officers or by Sentence of a Court Martial could be confined according to the nature and degree of the offence” (De Jonge 11; LAC MG 13, WO. 44, Vol. 18 345). During 1835-37 the temporary jail would be used by Bytown’s civilian authorities to hold prisoners who were to be transferred to the Perth jail, since Perth had a proper court system and jail facilities (De Jonge 58). In 1842, Thomas McKay built the first permanent jail and courthouse in Bytown, both of which were destroyed by fire some years later (Brault 132). In 1862, a new county jail was constructed and was used for over a century before it was officially closed in 1972 (Brault 132).

7.5 Conflicts and Struggle

Having been in Canada much longer, the French Canadians held the majority of the labour positions in the timber trade surrounding Bytown and many recently unemployed labourers wanted in. Most of Irish background—the Shiners, as they were known—were

extremely impoverished upon their arrival and thus were highly dependent on local work (Haig 109). Being too poor to relocate, the Shiners used violent tactics to push away the French Canadians in order to secure some employment in the timber trade. These schemes were exceptionally heinous, and involved beating citizens, poisoning wells, burning stables, stealing corpses from hearses, and stripping children naked and leaving them in the snow (Haig 109). In one case during the winter of 1830, a group of particularly nasty thugs went as far as blowing up a family home in Hog's Back (Haig 111). In another instance, there was an "internal dispute" amongst the Shiners when Michael Slaven split the skull of a man named Bryne who was trying to enter his house. Later, on July 9, Slaven struck a French Canadian with an iron poker and with the help of Daniel O'Connor fled to Hull to escape the powers of the Upper Canadian magistrates (Haig 110). Many citizens were afraid to stand up to these violent gangs, but some of the French Canadians eventually retaliated with force in June of 1835, and fighting continued to be a daily occurrence in Bytown (Haig 110). The French had Joseph Monterrand (also known as Big Joe Mufferaw), a Montreal native who stood over six feet (2 metres) tall and was known as "the greatest river fighter of all time" (Mika 132). His legendary strength and his lightning-quick feet perpetuated his legend that lived on in the logging camps for many decades after his death (Mika 132)⁸.

The brutality was continuous through the next two years leading up to what is considered one of the more severe riots in early January of 1837 (Brault 69). The issues centred on politics and the town elections. During a town hall meeting a group of 40 thugs came together to get their only candidate and leader Peter Aylen elected, which they did; they then demanded that Aylen be allowed to elect other council members of his choosing (Haig 110).

⁸ Stompin' Tom Connors wrote a song about the legend of Joseph Montferrand, called "Big Joe Mufferaw."

These vandals assaulted authority figures—who had shifted from the Royal Sappers and Miners to the ruling elite—and encouraged further drunken brawling and attacks. The attacks were primarily politically motivated but religious and cultural differences cannot be denied, as “later that day a blasphemy was offered at an image of St. Patrick mounted on Aylen’s sleigh” (Haig 110). The men who committed the act, George Patterson and James Johnston, were severely beaten and left at the site (Haig 110; Brault 69).

The Shiners War had ended by 1838 and by the 1840s the Shiners had drastically calmed down, but the discontentedness lived on in social and political tensions and increasingly in religious conflict (De Jonge 54; Cross 177-180). Lower Town’s Catholic population supported the clergy’s Reform Party, while inhabitants of Upper Town generally supported the anti-Catholic leadership of the Conservative Party (Tories). Interestingly, friction of this kind culminated in a relationship between the Irish and French Canadians, who after years of conflict came together in the fight against the then-dominant Protestants (De Jonge 54; Cross 177-180). Following riots in Montreal over the controversial Rebellion Losses Bill, Governor General Lord Elgin had scheduled a visit in September 1849 to explore the possibility of naming Bytown the seat of Parliament (Brault 139). On Monday, September 17, 1848, as supporters of Lord Elgin were preparing a welcoming address for his visit, outrage from opposing Tories triggered the infamous Stoney Monday Riots. Armed with stones, sticks, muskets, firearms, and cannons, Tories (Catholics) and Reformers (Protestants) faced off over the Rideau Canal at Sappers Bridge (Brault 75). While the potential for extreme violence was high, the local military was largely successful in keeping the two sides a safe distance apart; many arrests were made that day, the majority of whom were Reformers (De Jonge 55; Cross 186). Still, the threat was high enough to convince Lord Elgin to cancel his trip to Bytown, and alternative seats of Parliament

were to be explored, at least for the moment.

7.5 Creating a Capital

The Ottawa Valley proved to be a multicultural region from the start as many immigrants from England, Scotland, and Ireland seeking work on the Rideau Canal line or in the timber trade industry came to call the area home (Lee 28). Although the square timber industry, which the region was known for, peaked two years before the canal was completed, many local businessmen and workers profited greatly from the boom (Mika 122). It wasn't until the British government's 1842 decision to "repeal preferential tariffs on colonial lumber [that] the timber industry on the Ottawa River began to decline" (Mika 122). There was also the issue of the massive depletion of the forest (and reforestation not applied), so that by the 1850s the massive timber that made the square timber industry so strong was replaced by sawmilling (Mika 122). The Ottawa Valley would go on to shift its business focus for the next 50 years and used its pine and spruce supply to provide millions of feet annually to North American buyers (Mika 122).

During the shift from square timber to sawmill big changes were happening all over Bytown. One large milestone was that it officially incorporated as a town on January 1, 1850, (Serré 5). The idea of given Bytown the name Ottawa, after the local First Nations community, appeared in the *Bytown Gazette* as early as March 7, 1844 (Brault 19). It was officially named Ottawa (derived from "Odawa," or "Adawa," a common word to many First Nations tribes, meaning "traders") when it obtained city status in 1855 (Serré 6). As the population grew, so too did employment opportunities and a diverse array of public and religious institutions. As a result, Ottawa finally achieved some measure of social stability after decades of ethnic, religious, and political unrest. Its flourishing lumber industry, scenic hilltop setting on the Ottawa River, and geographic location put Ottawa back in the running for the seat of national government, which

still needed a permanent home. Governor General Sir Edmund Head wrote to Queen Victoria outlining Ottawa's virtues, and providing the reasons why he felt that it was a superior location for the head of Parliament (Haig 113-114). The most evident virtue was its location. Ottawa was in the interior of the province and far enough from American threat, while simultaneously being connected to major waterways, thanks in large part to the Rideau Canal (Haig 112-113). The city's location also brought together the very different cultures of Upper and Lower Canada, and the city itself, despite past conflicts, already had a well-established mix of religions and ethnicities and language. Queen Victoria sent a letter proclaiming Ottawa the national capital on the last day of 1857, and the Canadian head of Parliament has resided there ever since (Haig 114).

Conclusions

If you travel the length of the entire canal you will find that many early settlements have continued to grow and now make up some of eastern Ontario's most populated towns and cities. Most lock stations along the waterway provide visitors with information, washrooms, walking trails, and tours, as well as public parks nearby that enrich the Rideau Canal experience. Today, if you walk around the Ottawa Locks and Parliament Hill, there are very few indications that this was once a thriving military base that was so critical to the construction of the canal and the development of Ottawa. Although the Bytown Museum (formerly the Commissariat building) was used exclusively by the military, today it is one of a few artefacts that can represent the role the military had in the early days of Bytown. Names of streets still honour some prominent military personnel and pioneers of the community, and plaques and statues can be found scattered amongst the area that speak to the role of some major figures in Ottawa's

history. Ottawa history is filled with stories of triumph and tragedy, and the story of the Rideau Canal played a major role in the city we experience today.

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